

InGaN Nanowire Solar Cells, Phase I

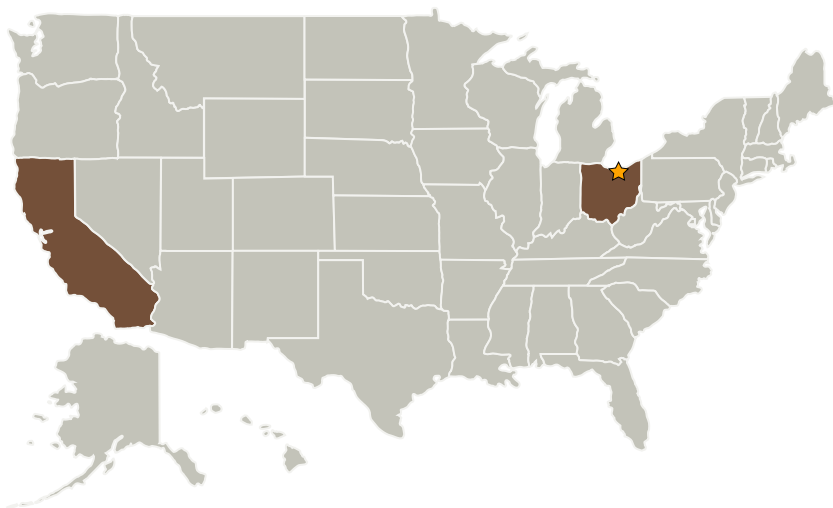
Completed Technology Project (2009 - 2010)



Project Introduction

NASA has very specific requirements when it comes to power generation technology. Solar panels are an obvious solution but making them suitable for the grueling space environment. Panels must withstand intense radiation bombardment and extreme temperature swings while maintaining acceptable levels of efficiency. Additionally because of the exorbitant costs of current technology NASA would like to reduce the costs associated with power generation. We propose to introduce a new class of solar cells that utilize the environmental strengths and absorption properties on InGaN technology. This material has an amazingly high defect tolerance but even more impressively can be tuned to capture any wave length of light in the solar spectrum. Our proposal offers the possibility of solar cell efficiencies exceeding 70% while providing excellent radiation resistance and a price point similar to that of silicon, 100 times cheaper than current space age technology.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Glenn Research Center(GRC)	Lead Organization	NASA Center	Cleveland, Ohio
VIPMobile, Inc.	Supporting Organization	Industry	San Francisco, California



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Glenn Research Center (GRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

California

Ohio

Project Transitions



January 2009: Project Start



January 2010: Closed out

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
 - └ TX03.1 Power Generation and Energy Conversion
 - └ TX03.1.1 Photovoltaic